

That which is claimed is:

1. A method for modulating growth of neoplastic cells, wherein said growth is mediated by peroxisome proliferator activated receptor-gamma (PPAR- γ), said method comprising contacting said cells with a composition effective to modulate said growth, wherein said composition comprises:

at least one PPAR- γ activator, and

at least one retinoid X receptor (RXR) selective agonist,

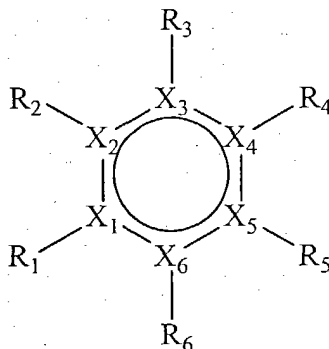
in a pharmaceutically acceptable carrier therefor.

2. A method according to claim 1 wherein said PPAR- γ activator is a PPAR- γ -selective prostaglandin or prostaglandin-like compound or precursor thereof.

3. A method according to claim 2 wherein said PPAR- γ -selective prostaglandin is a prostaglandin-J₂, a prostaglandin-D₂, or a precursor thereof.

4. A method according to claim 3 wherein said prostaglandin-J₂ is prostaglandin-J₂, Δ^{12} -prostaglandin-J₂ or 15-deoxy- $\Delta^{12,14}$ -prostaglandin-J₂.

5. A method according to claim 1 wherein said PPAR- γ activator has the structure I, wherein structure I is as follows:



wherein:

each of X₁, X₂, X₃, X₄, X₅ and X₆ is independently carbon, nitrogen, oxygen or sulfur, with the proviso that at least three of the atoms forming the ring are carbon,

R₁ is alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl, alkenylaryl, substituted alkenylaryl, alkynylaryl, substituted alkynylaryl, arylalkyl, substituted arylalkyl, arylalkenyl, substituted arylalkenyl, arylalkynyl, substituted arylalkynyl, poly(alkylene oxide), substituted poly(alkylene oxide), poly(alkylene sulfide), substituted poly(alkylene sulfide), poly(alkylene amine), substituted poly(alkylene amine), -OR, -SR or -NR₂, wherein each R is independently alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl, arylalkyl, substituted arylalkyl, poly(alkylene oxide), substituted poly(alkylene oxide), poly(alkylene sulfide), substituted poly(alkylene sulfide), poly(alkylene amine) or substituted poly(alkylene amine);

R₂ is hydrogen, alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl, alkenylaryl, substituted alkenylaryl, alkynylaryl, substituted alkynylaryl, arylalkyl, substituted arylalkyl, arylalkenyl, substituted arylalkenyl, arylalkynyl, substituted arylalkynyl, oxyalkyl, poly(alkylene oxide) or substituted poly(alkylene oxide);

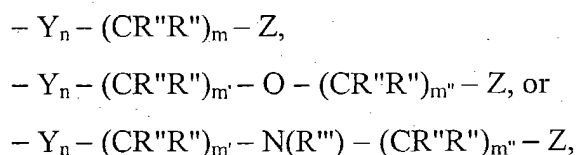
R₃ is hydrogen, hydroxy, halogen, alkoxy, lower alkyl, substituted lower alkyl, alkenyl, substituted alkenyl, alkynyl or substituted alkynyl;

R₄ is hydrogen, formyl, acyl, lower alkyl or substituted lower alkyl;

R₅ is hydrogen, hydroxy, lower alkoxy, lower alkyl, substituted lower alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl or halogen; and

R₆ is hydrogen, hydroxy, lower alkoxy, lower alkyl, substituted lower alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl or halogen.

6. A method according to claim 5 wherein "R₁" of Formula I is:



wherein:

Y is -O- or -S-,

n is 0 or 1,

each R'' is independently hydrogen, lower alkyl, substituted lower alkyl, hydroxy, lower alkoxy, thioalkyl, halogen, trifluoromethyl, cyano, nitro, amino, carboxyl, carbamate, sulfonyl or sulfonamide,

R''' is hydrogen, lower alkyl or substituted alkyl,

m falls in the range of 1 up to 15,

each m' falls independently in the range of 1 up to 8,

each m'' falls independently in the range of 0 up to 12, and

Z is a heteroatom-containing cyclic moiety, a substituted heteroatom-containing cyclic moiety, cyano, nitro, amino, carbamate, -OR^a, wherein R^a is H, alkyl, alkenyl, alkynyl, acyl or aryl; -C(O)R^b, wherein R^b is H, alkyl, substituted alkyl, alkoxy, alkylamino, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, aryl, substituted aryl, aryloxy, arylamino, alkylaryl, substituted alkylaryl, alkenylaryl, substituted alkenylaryl, alkynylaryl, substituted alkynylaryl, arylalkyl, substituted arylalkyl, arylalkenyl, substituted arylalkenyl, arylalkynyl, substituted arylalkynyl, heterocyclic, substituted heterocyclic or trifluoromethyl; -CO₂R^c, wherein R^c is H, alkyl, alkenyl, alkynyl or aryl; -SR^a, -S(O)R^a, -S(O)₂R^a or -S(O)₂NHR^a, wherein each R^a is as defined above.

7. A method according to claim 6 wherein Z is a polyheteroatom-containing cyclic moiety or a substituted polyheteroatom-containing cyclic moiety.

8. A method according to claim 7 wherein Z is a furan, thiophene, pyrrole, pyrazole, diazole, triazole, tetrazole, dithiole, oxathiole, oxazole, isoxazole, thiazole, isothiazole, oxadiazole, oxatriazole, dioxazole, oxathiazole, pyran, pyrone, dioxin, pyridine, pyrimidine, pyrazine, pyridazine, piperazine, diazine, triazine, oxazine, isoxazine, oxathiazine, oxadiazine, morpholino, azepin, oxepin, thiopin, diazepin, benzothiazole or a thiazolidinedione.

9. A method according to claim 7 wherein Z is a pyrazole, diazole, triazole, tetrazole, dithiole, oxathiole, oxazole, isoxazole, thiazole, isothiazole, oxadiazole, oxatriazole, dioxazole, oxathiazole, pyridazine, piperazine, diazine, triazine, oxazine, isoxazine, oxathiazine, oxadiazine, morpholine, diazepin or a thiazolidinedione.

10. A method according to claim 5 wherein "R₁" of Formula I is:



wherein:

Y is -O- or -S-,

n is 0 or 1,

x falls in the range of 2 up to 12; and

Z is a triazolyl moiety, a tetrazolyl moiety, an oxadiazolyl moiety, an oxatriazolyl moiety, a dioxazolyl moiety, an oxathiazolyl moiety, a triazinyl moiety, an isoxazinyl moiety, an oxathiazinyl moiety, an oxadiazinyl moiety, or a thiazolidinedionyl moiety.

11. A method according to claim 1 wherein said retinoid X receptor (RXR) selective agonist is a substituted benzoic acid or derivative thereof, a substituted nicotinic acid or derivative thereof or a substituted carboxylated furan.

12. A method according to claim 1 wherein said retinoid X receptor (RXR) selective agonist is 6-[1-(3,5,5,8,8-pentamethyl-5,6,7,8-tetrahydronaphthalen-2-yl)cyclopropyl]nicotinic acid (LG268).

13. A method according to claim 1 wherein said retinoid X receptor (RXR) selective agonist is 4-[1-(3,5,5,8,8-pentamethyl-5,6,7,8-tetrahydronaphthalen-2-yl)ethenyl]benzoic acid.

14. A method according to claim 1 wherein said neoplastic cells are cancerous breast cells, myelogenous leukemia cells, cancerous colon cells or cancerous prostate cells.

15. A method according to claim 13 wherein said cells which express PPAR- γ are cancerous breast cells.

16. A method according to claim 13 wherein said cells which express PPAR- γ are myelogenous leukemia cells.

17. A method according to claim 13 wherein said cells which express PPAR- γ are cancerous colon cells.

18. A method according to claim 13 wherein said cells which express PPAR- γ are cancerous prostate cells.

19. A method for treating a subject suffering from a disease state which is the result of neoplastic cell proliferation of cells which express PPAR- γ , said method comprising administering to said subject an amount of a therapeutic composition effective to ameliorate the effect of neoplastic cell proliferation on said cells, wherein said therapeutic composition comprises:

at least one PPAR- γ activator, and
at least one retinoid X receptor (RXR) selective agonist,
in a pharmaceutically acceptable carrier therefor.

20. A composition comprising at least one PPAR- γ -selective activator and at least one retinoid X receptor (RXR) selective agonist.